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THE STATE OF THE STATES 1987

AIR POLLUTION REDUCTION

1

APPENDIX

FUND FOR RENEWABLE ENERGY & THE ENVIRONMENT

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Introduction

The Air Pollution Appendix is one of six appendices designed to supplement the data presented in the 1987 State of the States report. It has been compiled with various goals in mind: to provide detailed, comprehensive, and current data on the status of the fifty state air quality control programs, to contribute to networking activities and information sharing, and to add to constructive debate on critical environmental policy questions.

Information from the main report--state rankings, primary map, brief text, and primary matrix--are presented in the forward section of the packet. Additional matrix information and maps as well as national air program contacts are also included.

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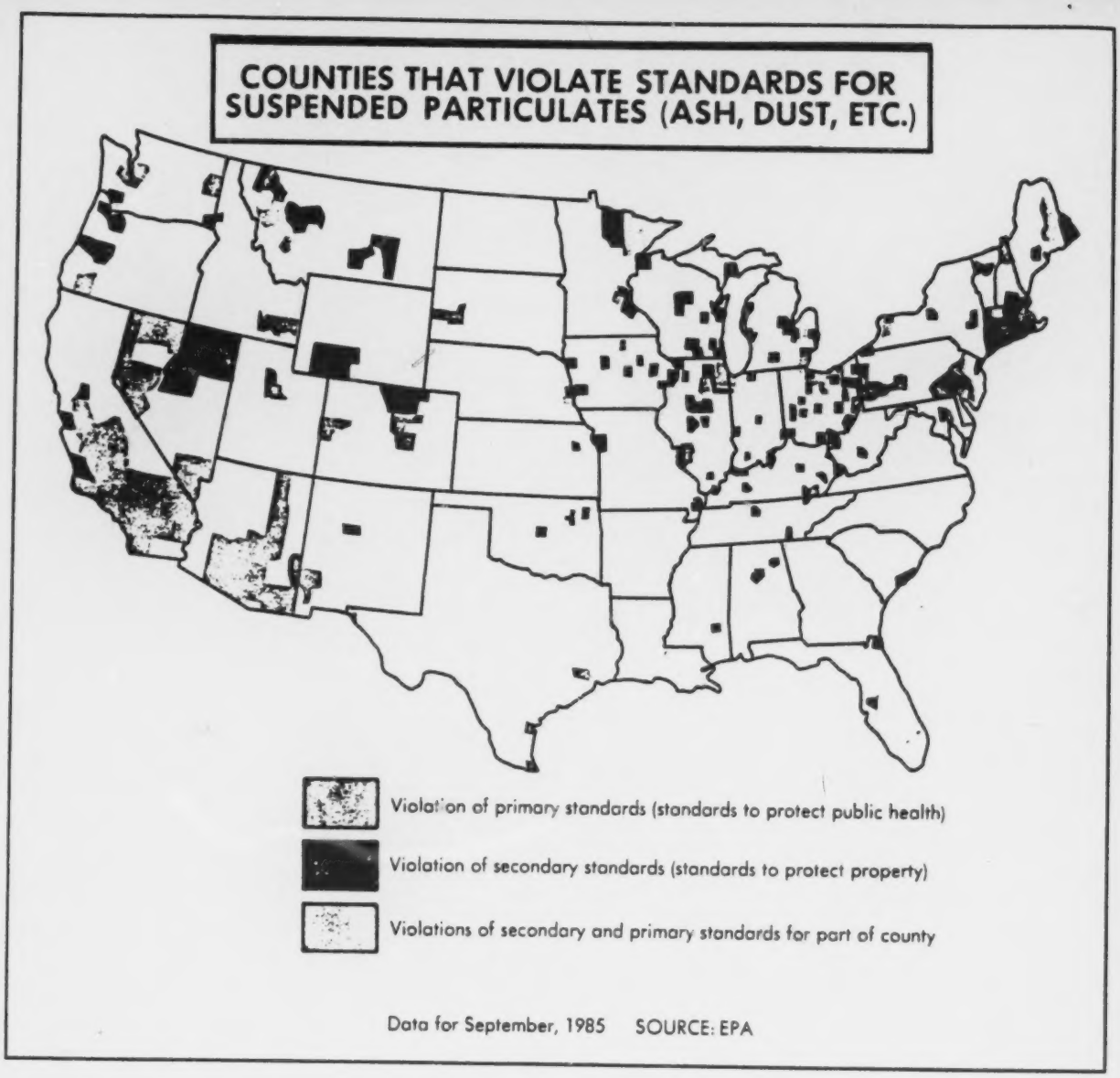
STATE ABBREVIATIONS

AL	ALABAMA
AK	ALASKA
AZ	ARIZONA
AR	ARKANSAS
CA	CALIFORNIA
CO	COLORADO
CT	CONNECTICUT
DE	DELAWARE
FL	FLORIDA
GA	GEORGIA
HI	HAWAII
ID	IDAHO
IL	ILLINOIS
IN	INDIANA
IA	IOWA
KS	KANSAS
KY	KENTUCKY
LA	LOUISIANA
ME	MAINE
MA	MASSACHUSETTS
MI	MICHIGAN
MN	MINNESOTA
MS	MISSISSIPPI
MO	MISSOURI
MT	MONTANA
NE	NEBRASKA
NV	NEVADA
NH	NEW HAMPSHIRE
NJ	NEW JERSEY
NM	NEW MEXICO
NY	NEW YORK
NC	NORTH CAROLINA
ND	NORTH DAKOTA
OH	OHIO
OK	OKLAHOMA
OR	OREGON
PA	PENNSYLVANIA
RI	RHODE ISLAND
SC	SOUTH CAROLINA
SD	SOUTH DAKOTA
TN	TENNESSEE
TX	TEXAS
UT	UTAH
VT	VERMONT
VA	VIRGINIA
WA	WASHINGTON
WV	WEST VIRGINIA
WI	WISCONSIN
WY	WYOMING

STATE PROGRAM RANKINGS: HOW STATES MEASURE UP

	AIR PROGRAMS	SOIL CONSERVATION PROGRAMS	GROUNDWATER PROGRAMS	HAZARDOUS WASTE PROGRAMS	SOLID WASTE PROGRAMS	RENEWABLE ENERGY & ENERGY CONSERVATION	TOTAL	RANK
AL	3	3	2	3	3	2	16	26
AK	7	3	3	2	2	1	18	25
AZ	7	3	7	5	2	3	27	19
AR	1	3	2	5	3	4	18	25
CA	10	3	7	9	9	10	48	2
CO	4	6	4	3	4	3	24	21
CT	9	6	9	4	9	7	44	4
DE	1	8	6	3	4	2	24	21
FL	7	4	9	8	6	7	41	7
GA	4	5	7	4	3	3	26	20
HI	4	4	3	2	2	4	19	24
ID	2	1	6	1	2	6	18	25
IL	7	9	5	7	7	6	41	7
IN	6	5	4	6	7	8	36	10
IA	5	10	5	5	7	7	39	8
KS	2	5	8	8	4	2	29	17
KY	7	3	1	6	8	3	28	18
LA	5	3	3	7	2	1	21	23
ME	3	6	7	6	6	8	36	10
MD	3	8	7	6	6	4	34	12
MA	6	4	8	9	6	8	41	7
MI	8	7	8	9	8	3	43	5
MN	5	6	5	9	9	4	38	9
MS	1	3	2	4	2	2	14	28
MO	5	6	7	8	1	4	31	15
MT	2	5	6	3	1	6	23	22
NE	4	6	6	2	6	7	31	15
NV	2	6	4	2	2	7	23	22
NH	6	5	5	7	5	4	32	14
NJ	9	6	7	10	10	5	47	3
NM	1	2	8	5	1	6	23	22
NY	5	5	10	8	8	7	43	5
NC	8	7	8	6	6	7	42	6
ND	1	3	4	2	3	3	16	26
OH	8	8	4	5	5	4	34	12
OK	5	5	5	4	7	3	29	17
OR	6	2	7	5	7	8	35	11
PA	8	6	5	5	3	5	32	14
RI	6	4	6	4	7	3	30	16
SC	6	5	7	5	2	6	31	15
SD	1	8	6	2	2	4	23	22
TN	3	3	4	7	5	7	29	17
TX	7	2	2	5	3	7	26	20
UT	3	4	3	2	1	3	16	26
VT	3	3	5	6	4	7	28	18
VA	8	7	6	2	3	7	33	13
WA	8	1	6	5	5	3	29	17
WV	2	5	2	4	1	1	15	27
WI	9	8	8	7	8	9	49	1
WY	1	3	8	1	2	1	16	26


COUNTIES THAT VIOLATE STANDARDS FOR SUSPENDED PARTICULATES (ASH, DUST, ETC.)
Violation of primary standards (standards to protect public health)
Violation of secondary standards (standards to protect property)
Violations of secondary and primary standards for part of county
Data for September, 1985 SOURCE: EPA

AIR POLLUTION REDUCTION--THE BIG PICTURE

Much of the more visible pollution once discharged into the air is now gone--the primary reason for this progress is the federal Clean Air Act. First passed in 1963, the Clean Air Act set up a partnership between the federal and state governments to reduce air pollution. Amendments passed in 1970 put teeth into the law. The new Environmental Protection Agency was directed to adopt National Ambient Air Quality Standards for major pollutants. States were to develop State Implementation Plans (SIPs) to detail how they would meet the standards.

Seven major pollutants were targeted for reduction: particulates (ash, dust, etc.), sulphur oxides, nitrogen oxides, carbon monoxide, hydrocarbons,* ozone, and later lead. The law required that primary standards to protect public health be met by 1975. Secondary standards to protect property were given extended deadlines.

By 1975 it was apparent that the reduction goals were not going to be met. After heated debate, Congress passed a new set of amendments to the Clean Air Act in 1977. If the amendments in 1970 had teeth, those passed in 1977 offered a convincing bite. New deadlines were set to achieve health related reductions in pollution by December 31, 1982. Attainment of standards for ozone pollution or severe carbon monoxide problems were targeted for December 31, 1987. The secondary standards to protect property were to be met "as expeditiously as possible."

In order to assure that states would take these deadlines seriously, economic sanctions were put in place. Any state which had a nonattainment area was required to submit a new implementation plan. If the plan was not submitted and approved by July 1, 1979, construction of new industrial sources of air pollution could be prohibited and federal funds for highways, housing and sewage treatment plants could be withheld. Courts were also given authority to enforce any sanctions, if EPA failed to do so.

Between 1975 and 1984 ambient levels of total suspended particulates were reduced by 20 percent by mass. But in 1984, particulate emissions increased 4 percent and ambient levels increased 2 percent. Sulphur dioxide, which contributes to acid rain and can cause respiratory damage also increased two percent between 1983 and 1984 after a decline in ambient levels of 36 percent. Carbon monoxide levels which had declined 34 percent between 1975 and 1984, decreased only 1 percent in 1984. Nitrogen dioxide which contributes to pneumonia and bronchitis increased from 1975 to 1979, decreased through 1983, and increased slightly in 1984. Ozone levels which had decreased 17 percent appeared to remain even in 1984. And ambient levels of lead--which can cause irreversible damage to the brain, kidneys, nervous system, and circulatory system--decreased 70 percent at 36 urban sites from 1975 to 1984, and between 1983 and 1984 declined 7 percent.

Although reduction of the major criteria pollutants remains the cornerstone of air pollution control, newly discovered air pollution problems are demanding attention in every state.

How much work the states will be able to take on with new air pollution problems remains uncertain. The partial success in meeting goals established by the Clean Air Act may foretell the future for new expensive air programs.

* Ambient guidelines were originally set for hydrocarbons but have since been neglected by all but a few state and local monitoring sections due to poor instrumentation and lack of EPA's authority to enforce the guidelines.

The general indications are that the stall in progress could be lengthy. At least seven states reduced their air program budgets in 1985 and the federal government effectively froze its contributions. State and local agency grants totaled $94.3 million in 1981 and $96.3 million in 1986, and cutbacks in air monitoring and research already reflect the negative impacts this trend is having on state air program activities.

At the same time, however, an unprecedented growth in public concern for the environment offers some hope for progress amidst this stall in air pollution control. While a decreased federal role in air management severely hinders many state budgets, the opportunity for increased pressures and greater control at the state and local levels may provide incentives to bring environmental protection into the forefront of state policy concerns

AIR PROGRAM SNAPSHOT

California offers the best working model for air pollution reduction policies and programs. The program combines a state Air Resources Board made up of technical experts and representatives of 44 county and regional air quality agencies. The local agencies are primarily responsible for controlling emissions of industrial facilities and the board provides financial and technical expertise and assists in the enforcement of standards. The board also oversees a research program second in size only to the federal EPA.

In addition to integrated work at the state and local levels, federal support is essential in resolving regional problems such as acid rain, or participating in international efforts to curb global problems with carbon dioxide pollution or ozone depletion. Energy, manufacturing and transportation industries also need to play a vital role in funding research, monitoring, and pollution reduction programs.

RANKING NOTES

The focus of this state air program review has been the emissions reduction for six air pollutants outlined in the Clean Air Act of 1970. The criteria pollutants include particulates, sulphur dioxide, nitrogen dioxide, carbon monoxide, ozone and lead. While the majority of air quality standards are formulated on the federal level and the issue of air pollution continues to be a national problem, states have a strong role to play in the implementation and enforcement of the federal standards. Opportunity also exists for states to go beyond federal legislation when specific problems require immediate attention and the federal government is slow to respond, as in the case of acid rain and toxic air pollution.

States were ranked on a scale of one to ten on the strength of their environmental policies. The rank is not meant to judge particular environmental conditions in each state, but considers environmental problems as a need for program strength. Program initiatives weighed against this need include the extent of the monitoring network for the criteria pollutants within each state, implementation strategies, enforcement actions, legislative initiative, funding levels, and program innovation. The attainment or

nonattainment status of the criteria pollutants* within each state gave the most direct measure of the extent of the air pollution problem. And a state's overall air quality served as a background against which state policy actions were considered.

Summary of State Air Pollution Reduction Activity

- o thirty-four states have deficient implementation plans (SIPs) in one or more counties.
- o EPA has imposed sanctions on twenty-one states as a consequence of SIP deficiencies;
- o six states have passed legislation addressing acid rain control (no federal acid rain law has been passed);
- o twenty-nine states are conducting acid rain research;
- o twenty states have initiated regulatory programs in the newly emerging field of toxic air pollutants;
- o as of July 1985:
  - * Thirty-seven states exceeded the primary standard for CO
  - * two states exceeded the primary standard for NOx
  - * eighteen state exceeded the primary standard for SO2
  - * thirty-five states exceeded the primary standard for O3
  - * thirty-four states exceeded the primary standard for TSP

* EPA opposes designating a status of attainment or nonattainment of the National Ambient Air Quality Standards for lead.

AIR MATRIX

	Number of counties with FIP deficiencies 1986	Criteria pollutants exceeding primary standards in one or more designated area[1]	Total number of monitors for criteria pollutants[2]	Total enforcement actions[3]	EPA sanctions imposed as consequence for SIP deficiencies[4]	Toxic pollutant control program in place	Acid deposition control program in place	Conducts research on acid rain	1985 total air program budget	1986 total air program budget
AL	4	S,O,T	54	1,365	•	•		•	$2,034,531	$ 1,735,000
AK		C,	37	250				•	949,000	—
AZ	17	C,S,O,T,	78	467	•	•			1,742,200	1,433,300
AR			37	691		•			961,011	1,120,028
CA	35	C,N,O,T,	455	3970	•	•		•	47,879,000	56,406,000
CO	6	C,O,T,	107	470					4,382,000	3,313,000
CT		C,O,	120	1,196		•		•	4,133,820	—
DE		O,	31	177					1,083,962	—
FL	4	S,O,	250	822					3,903,501	—
GA	1	C,O,	23	2,797		•			2,744,943	2,406,633
HI		S,T,	27	142	•				871,000	752,000
ID		C,T,	24	531					691,000	—
IL	28	C,S,O,T,	213	4,892	•	•		•	4,871,600	5,033,600
IN	24	C,S,O,T,	119	2,220	•			•	4,209,137	3,661,181
IA	4	C,T,	86	1,923	•			•	1,031,050	1,178,042
KS	3	C,O,T,	31	2,695					988,428	—
KY	17	C,S,O,T,	184	1,700	•			•	3,167,100	3,355,900
LA	1	O,	66	2,399					3,482,000	2,960,000
ME		S,O,T,	127	533				•	948,700	763,400
MD		C,O,T,	110	646				•	3,318,161	2,194,808
MA		C,O,	99	2,053			•	•	4,814,000	3,967,000
MI	1	C,O,T,	161	1,853		•	•	•	4,557,100	4,627,100
MN	14	C,S,T,	70	1,087	•	•	•	•	2,677,131	—
MS		T,	28	687		•			1,121,000	1,108,334
MO	9	C,O,T,	139	1,442	•			•	2,870,900	—
MT	2	C,S,T,	111	181	•				870,000	797,000
NE	2	C,T,	74	2,696	•				359,852	270,481
NV	2	C,S,O,T,	38	210	•	•		•	536,553	445,821
NH	1	C,O,T,	68	278			•		792,488	—
NJ	18	C,O,	193	2,055		•		•	7,699,056	6,943,480
NM	1	C,S,T,	78	474	•			•	1,754,600	1,557,000
NY	3	C,O,T,	254	4,047	•	•	•		11,800,000	8,700,000
NC	2	C,O,	124	1,746				•	2,870,288	2,551,912
ND			43	235				•	820,399	916,956
OH	34	C,S,O,T,	390	3,869	•	n/a		•	4,453,278	3,786,921
OK	2	C,O,T,	95	702					1,917,169	1,739,000
OR	1	C,O,T,	37	948	•	•			6,377,000	6,084,000
PA	3	C,S,O,T,	223	3159		•		•	6,179,000	6,356,000
RI		C,O,	33	182				•	895,499	880,000
SC		C,O,	85	2,671		•			2,581,874	1,968,395
SD	1	T,	39	212				•	287,817	152,966
TN	2	C,N,S,O,T,	19	1,434	•	•		•	2,194,100	—
TX	8	C,O,T,	211	3,596	•	•		•	14,046,001	14,324,413
UT	1	C,S,O,T,	45	874	•				1,522,445	1,299,000
VT			13	132					606,752	618,000
VA	2	C,O,	153	1,381		•		•	4,886,557	4,571,083
WA	1	C,O,T,	131	627		•		•	1,629,620	—
WV		S,T,	77	538				•	1,710,535	—
WI	•	C,S,O,T,	159	1,749	•		•	•	3,857,000	3,272,000
WY			23	798					994,000	920,000

• has a statewide SIP deficiency for sulphur dioxide

FOOTNOTES TO THE AIR MATRIX

[1] SIP signifies State Implementation Plan. SIP deficiencies include both major and minor inadequacies in the state's plan for controlling sources and pollutant levels.
(source: US EPA, Actions on Deficient SIPs and Other NOnattainment SIPs, in-house data base, Office of Air and Radiation, Washington, DC, 1986).

[2] "Designated areas" are areas designated for air quality planning purposes. Criteria pollutants include:

C=Carbon Monoxide
N=Nitrogen oxides
S=Sulfur oxides
O=Ozone
T=TSP (particulate matter evaluated in terms of total suspended particulates, TSP)

(source: Code of Dederal Regulations, Office of the Federal Registrar, Washington, DC, Number 40, Parts 81 to 99,1985).

[3] Includes monitors from both the National Air Monitoring Network System (NAMS), and the State and Local Air Monitoring Network System (SLAMS).
(source: "FY85 State Funding Surveys," an unpublished report by the State and Territorial Air Pollution Program Administrators, Washington, DC, April 1984).

[4] Includes notices of violation, inspections, source tests, warning letters, etc.
(source: US EPA, "Enforcement Actions and the 1986 Air Quality Attainment/Nonattainment Status," EPA Compliance Data System, Washington, DC, 1986).

[5] See text for an explanation of appropriate sanctions.
(source: US EPA, actions on Deficient SIPs and Other Nonattainment SIPs, in-house database, Office of Air and Radiation, Washington, DC, 1986).

STATE AIR PROGRAM BUDGETS

TABLE I

STATE	FY85 FEDERAL APPROPRIATIONS	FY85 STATE APPROPRIATIONS	PERCENT FEDERAL	PERCENT STATE	PERCENT OTHER	FY82 FEDERAL APPROPRIATIONS	FY82 STATE APPROPRIATIONS
AL	1,093,000	942,000	53.7	46.3		1,045,000	697,000
AK	N/A	N/A	N/A	N/A		N/A	N/A
AZ	731,917	1,010,283	42.0	58.0		679,300	754,000
AR	488,750	472,261	50.9	49.1		600,000	520,000
CA	2,873,000	44,568,000	6.0	93.1		2,072,000	52,884,000
CO	1,284,000	3,099,000	29.3	70.7		1,070,000	2,402,000
CT	1,975,000	N/A	N/A	N/A		N/A	N/A
DE	610,810	N/A	N/A	N/A		N/A	N/A
FL	858,717	N/A	N/A	N/A		N/A	N/A
GA	1,108,000	1,636,943	40.4	59.6		1,081,000	1,325,633
HI	362,000	509,000	41.6	58.4		440,000	312,000
ID	491,300	199,700	71.1	28.9		N/A	N/A
IL	3,478,600	1,355,400	71.4	27.8		3,902,200	1,170,400
IN	2,572,774	1,476,288	63.5	36.5		2,073,327	1,587,854
IA	740,000	281,050	71.8	27.3		896,992	281,050
KS	N/A	N/A	N/A	N/A		N/A	N/A
KY	1,180,200	1,623,200	37.3	51.3	11.5	1,229,200	1,774,800
LA	1,500,750	765,278	43.1	22.0	34.9	1,400,000	1,043,000
ME	493,900	454,800	52.1	47.9		469,100	294,300
MD	1,781,572	1,506,387	53.7	45.4		1,902,884	1,028,459
MA	2,600,000	2,214,000	54.0	46.0		2,539,000	1,428,000
MI	2,098,100	2,4°9,000	46.0	54.0		1,537,800	3,089,300
MN	1,318,607	N/A	N/A	N/A		N/A	N/A
MS	665,000	456,000	59.3	40.7		665,000	443,334
MO	N/A	N/A	N/A	N/A		N/A	N/A
MT	550,000	320,000	63.2	36.8		550,000	247,000
NE	269,889	85,963	75.0	23.9		183,877	86,594
NV	259,890	276,663	48.4	51.6		250,292	195,529
NH	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NJ	3,349,555	4,349,501	43.5	56.5		3,100,000	3,843,489
NM	879,000	875,600	50.1	49.9		950,000	607,000
NY	5,800,000	6,000,000	49.2	50.8		6,300,000	2,400,000
NC	1,480,234	1,307,792	51.6	45.6	2.9	1,415,435	1,136,477
ND	441,000	311,320	53.8	37.9	8.3	446,000	423,578
OH	1,724,935	2,728,343	38.7	61.3		1,315,240	2,471,681
OK	1,200,000	433,169	62.6	22.6	14.8	1,100,000	385,000
OR	1,827,000	1,539,000	28.6	24.1	47.2	1,756,000	1,407,000
PA	3,124,000	3,055,000	50.6	49.4		2,902,000	3,454,000
RI	650,999	242,500	72.9	27.1		660,000	220,000
SC	1,000,000	1,581,894	38.7	61.3		1,009,657	958,738
SD	215,863	71,954	75.0	25.0		114,725	38,241
TN	1,048,600	1,137,200	47.8	51.8	.4	N/A	N/A
TX	3,429,100	10,616,901	24.4	75.6		3,990,262	10,334,151
UT	1,052,919	469,526	69.2	30.8		940,476	358,000
VT	440,000	166,752	72.5	27.5		464,000	154,000
VA	2,241,150	2,645,407	45.9	54.1		2,326,289	2,244,794
WA	768,000	861,620	47.1	52.9		N/A	N/A
WV	N/A	N/A	N/A	N/A		N/A	N/A
WI	1,727,000	1,828,000	45.0	47.6	7.3	1,597,000	1,665,000
WY	457,000	537,000	46.0	54.0		438,000	482,000

STATE AIR MONITORING NETWORKS AND ENFORCEMENT ACTIONS

TABLE II

STATE	CO MONITORS	NO_x MONITORS	SO_2 MONITORS	OZONE MONITORS	LEAD MONITORS*	TSP MONITORS	STATE NOTICES OF VIOLATION FY1985	STATE INSPECTIONS FY1985
AL	N/A	0	2	8	43	1	583	23
AK	7	1	3	1	22	3	67	9
AZ	9	2	16	9	42	N/A	267	2
AR	N/A	1	2	2	30	2	249	19
CA	78	75	58	116	128	*	2,787	240
CO		4	2	11	78	12	362	6
CT	5	3	15	10	40	46	406	126
DE	2	2	8	5	12	2	91	0
FL	N/A	N/A	N/A	N/A	N/A	N/A	479	4
GA	4	2	11	4	N/A	2	1,263	37
HI	N/A	1	10	2	12	2	116	0
ID	2	N/A	2	N/A	20	N/A	143	21
IL	14	11	30	38	101	19	3,218	4
IN	N/A	3	14	17	85	*	628	36
IA	N/A	N/A	N/A	N/A	N/A	N/A	328	1
KS	N/A	N/A	N/A	N/A	N/A	N/A	493	4
KY	12	8	12	28	124	*	893	111
LA	3	4	6	16	33	4	931	30
ME	1	1	39	6	71	9	171	11
MD	N/A	8	13	23	60	6	481	4
MA	9	8	29	15	32	6	367	35
MI	N/A	7	15	18	121	*	1,000	1
MN	N/A	N/A	N/A	N/A	N/A	N/A	434	49
MS	N/A	N/A	N/A	N/A	N/A	N/A	217	15
MO	12	14	19	19	54	21	711	2
MT	N/A	6	13	6	79	7	115	2
NE	6	3	4	5	56	*	916	2
NV	3	2	1	2	14	14	148	1
NH	2	0	20	6	30	10	144	7
NJ	35	14	42	19	72	11	1,558	84
NM	6	3	12	6	51	N/A	74	15
NY	13	6	37	24	162	12	3,225	85
NC	5	1	21	22	75	0	1,042	27
ND	N/A	4	11	3	25	N/A	103	1
OH	24	18	56	34	282	10	1,803	25
OK	N/A	6	9	7	66	7	392	1
OR	10	1	2	7	17	*	830	63
PA	N/A	23	37	38	110	15	2,637	14
RI	3	1	6	2	16	5	83	1
SC	4	5	13	13	50	0	592	30
SD	N/A	6	6	0	27	0	28	1
TN	3	N/A	1	2	13	N/A	811	83
TX	15	12	21	35	128	N/A	1,944	384
UT	N/A	N/A	7	N/A	20	N/A	623	43
VT	1	0	3	2	7	0	65	2
VA	N/A	11	16	24	100	2	1,049	1
WA	N/A	4	20	14	81	12	514	2
WV	4	5	23	5	40	N/A	435	3
WI	5	9	33	28	82	2	816	64
WY	N/A	N/A	2	N/A	21	N/A	322	2

* = lead monitors are included with total TSP monitors

STATE REGULATORY AIR TOXICS PROGRAMS

TABLE III

STATE	PROGRAM IN PLACE	PROGRAM DEVELOPING	PROGRAM BASED ON PROMULGATED REGULATIONS	PROGRAM BASED ON INFORMAL GUIDELINES	LIMITED TO SPECIFIED LIST OF POLLUTANTS	LIMITED TO SPECIFIED LIST OF SOURCES OR SOURCE CATEGORIES	USE ACCEPTABLE AMBIENT CONCENTRATIONS IN PERMIT REVIEW	USE FORMALLY ADOPTED AMBIENT STANDARDS FOR NON-CRITERIA POLLUTANTS	ACCEPTABLE AMBIENT CONCENTRATIONS ON STANDARDS BASED ON TLV*	ACCEPTABLE AMBIENT CONCENTRATIONS ON STANDARDS BASED ON ORIGINAL RESEARCH	CONTROL TECHNOLOGY REQUIREMENTS	RISK ASSESSMENT ON CASE-SPECIFIC BASIS	EMISSIONS INVENTORY FOR AIR TOXICS
AK	N	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Y	Y	Y
AL	Y	N	N	Y	N	N	N	Y	N	N	N	N	N
AR	Y	N	N	Y	N	N	N	Y	N	N	Y	N	N
AZ	Y	N/A	N/A	N/A	N	N	N	Y	N	N	N	Y	Y
CA	Y	N	Y	Y	N	N	Y	Y	N	N	Y	N	N
CO	Y	N	Y	Y	N	N	N	N	N	N	Y	Y	N
CT	N	Y	Y	N	N	N	N	Y	N	N	Y	Y	N
DE	Y	N	N/A	N/A	N	N	Y	Y	N	N	Y	Y	Y
FL	N	Y	Y	Y	N	N	Y	Y	N	N	Y	Y	N
GA	Y	N	N/A	N	N	N	Y	Y	N	N	Y	Y	N
HI	N	Y	N	N	N	N	Y	N	N	N	Y	Y	N
ID	N	N	N	Y	N	N	N	Y	N	N	N	Y	Y
IL	N	Y	N	N	N	N	N	Y	N	N	Y	Y	N
IN	N	Y	N	N	N	N	N	Y	N	N	Y	Y	N
IA	N	N	N	N	N	N	N	N	N	N	Y	Y	N
KS	N	Y	N	N	N	N	N	N	N	N	Y	Y	N
KY	N	N	N	N	N	N	N	N	N	N	Y	Y	N
LA	Y	Y	Y	N	N	N	Y	Y	N	N	Y	Y	N
ME	Y	N	N	N	N	N	N	Y	N	N	Y	Y	N
MD	N	Y	Y	N	N	N	N	Y	N	N	Y	Y	N
MA	N	Y	Y	N	N	N	N	Y	N	N	Y	Y	N
MI	Y	N	N	N	N	N	N	Y	N	N	Y	Y	N
MN	Y	N	N	N	N	N	N	Y	N	N	Y	Y	N
MS	N	Y	Y	N	N	N	N	Y	N	N	Y	Y	N
MO	N	Y	Y	N	N	N	N	Y	N	N	Y	Y	N
MT	Y	N	Y	N	N	N	N	Y	N	N	Y	Y	N
NE	N	Y	Y	N	N	N	N	Y	N	N	Y	Y	N
NV	Y	N	Y	N	N	N	N	Y	N	N	Y	Y	N
NH	N	Y	Y	N	N	N	N	Y	N	N	Y	Y	N
NJ	N	Y	Y	N	N	N	N	Y	N	N	Y	Y	N
NM	Y	N	Y	N	N	N	N	Y	N	N	Y	Y	N
NY	N	Y	Y	N	N	N	N	Y	N	N	Y	Y	N
NC	N	Y	Y	N	N	N	N	Y	N	N	Y	Y	N
ND	N	N	N	N	N	N	N	Y	N	N	Y	Y	N
OH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
OK	N	Y	N	N	N	Y	N	Y	N	Y	N	N	Y
OR	Y	Y	N	N	N	Y	N	Y	N	Y	N	N	Y
PA	N	Y	N	N	N	Y	N	Y	N	Y	N	N	Y
RI	Y	N	N	Y	N	Y	N	Y	N	Y	N	N	Y
SC	N	Y	N	N	N	Y	N	N/A	N	Y	N	N	Y
SD	Y	N	N	Y	N	Y	N	Y	N	Y	N	N	Y
TN	N	Y	N	N	N	Y	N	Y	N	Y	N	N	Y
TX	Y	N	Y	Y	N	Y	N	Y	N	Y	N	N	Y
UT	N	Y	Y	N	N	Y	N	Y	N	Y	N	N	Y
VT	N	Y	N	N	N	Y	N	Y	N	Y	N	N	Y
VA	Y	N	N/A	Y	N	N	N	Y	N	Y	N	N	Y
WA	N/A	N	N	Y	N	N	N	Y	N	Y	N	N	Y
WV	N	Y	N	N	N	N	N	Y	N	Y	N	N	Y
WI	N	Y	Y	N	N	N	N	Y	N	Y	N	N	Y
WY	N	N	N	N	N	N	N	Y	N	Y	N	N	Y

Y=YES; N=NO

* Threshold Limit Value

Areas most sensitive to acid rain

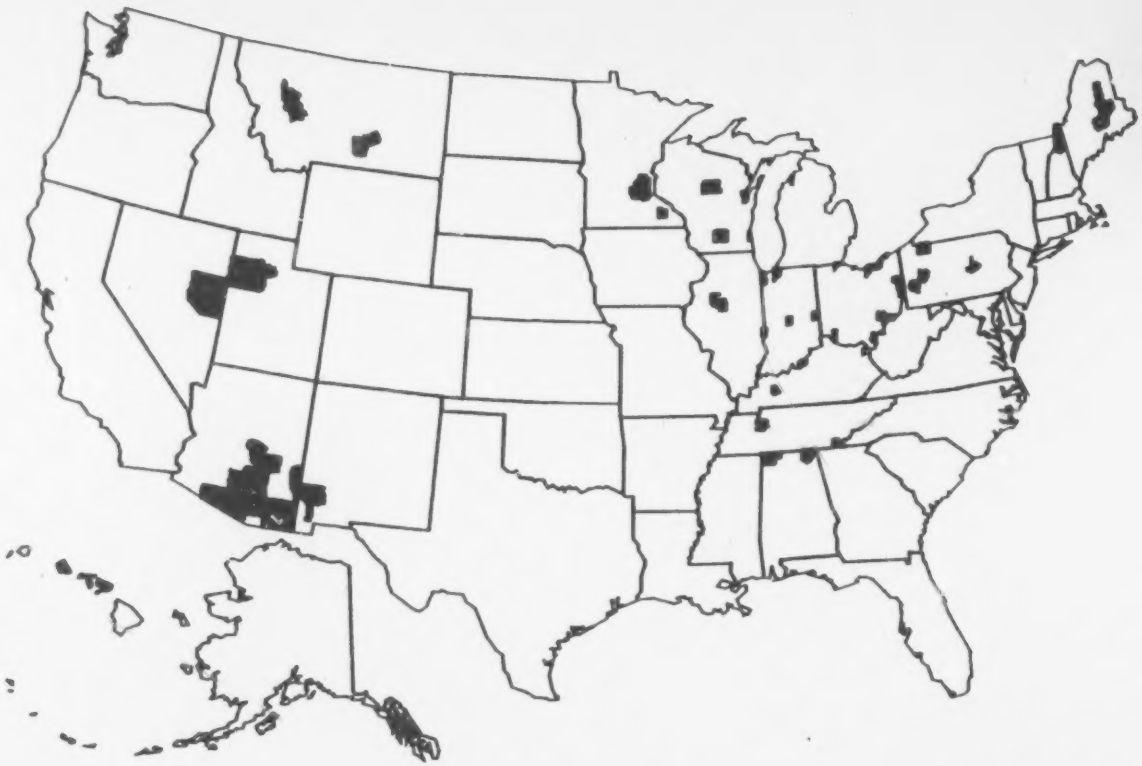
Major sources of sulfur dioxide

Common wind paths
(common wind paths occur at 1,000-2,000 feet)

Source: Acid Rain in Minnesota, 1985

Figure 5. This map shows the major sources of sulfur dioxide emissions (more than 100 kilotons per year), common wind paths, and the areas of North America most sensitive to acid rain (after Galloway and Cowling, 1978).

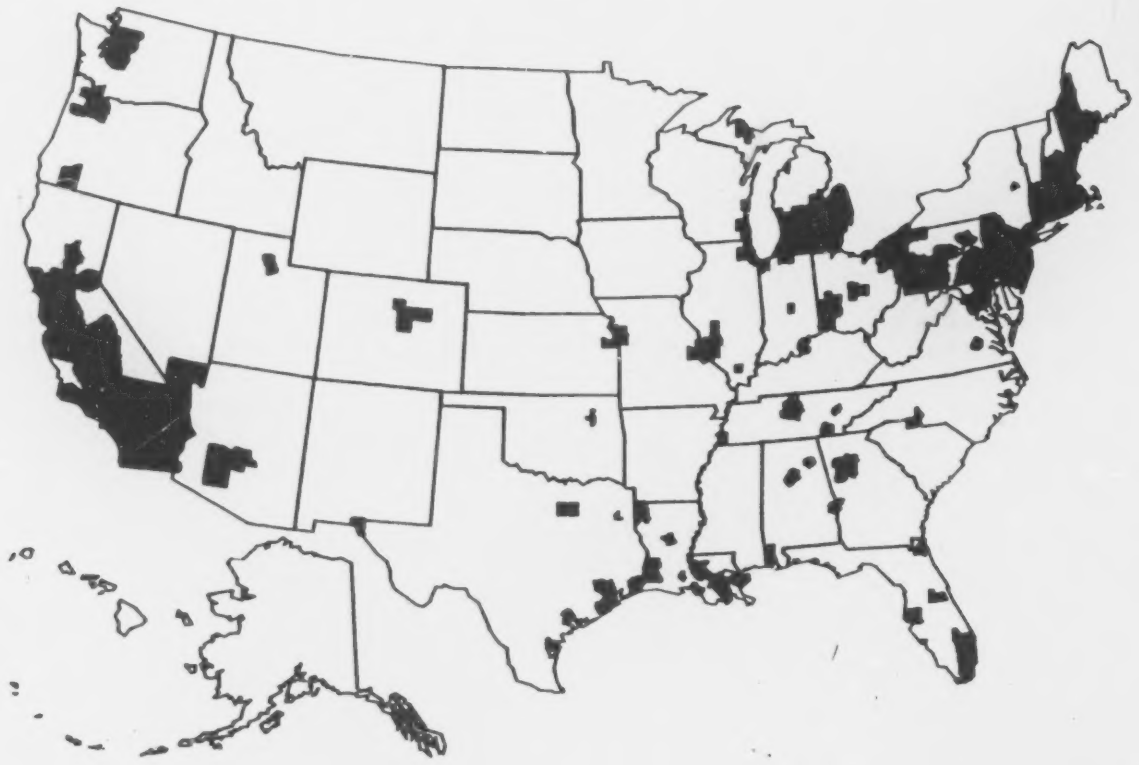
PROMULGATED LIST OF SO2 NON-ATTAINING COUNTIES - 1985



SEPTEMBER 1985

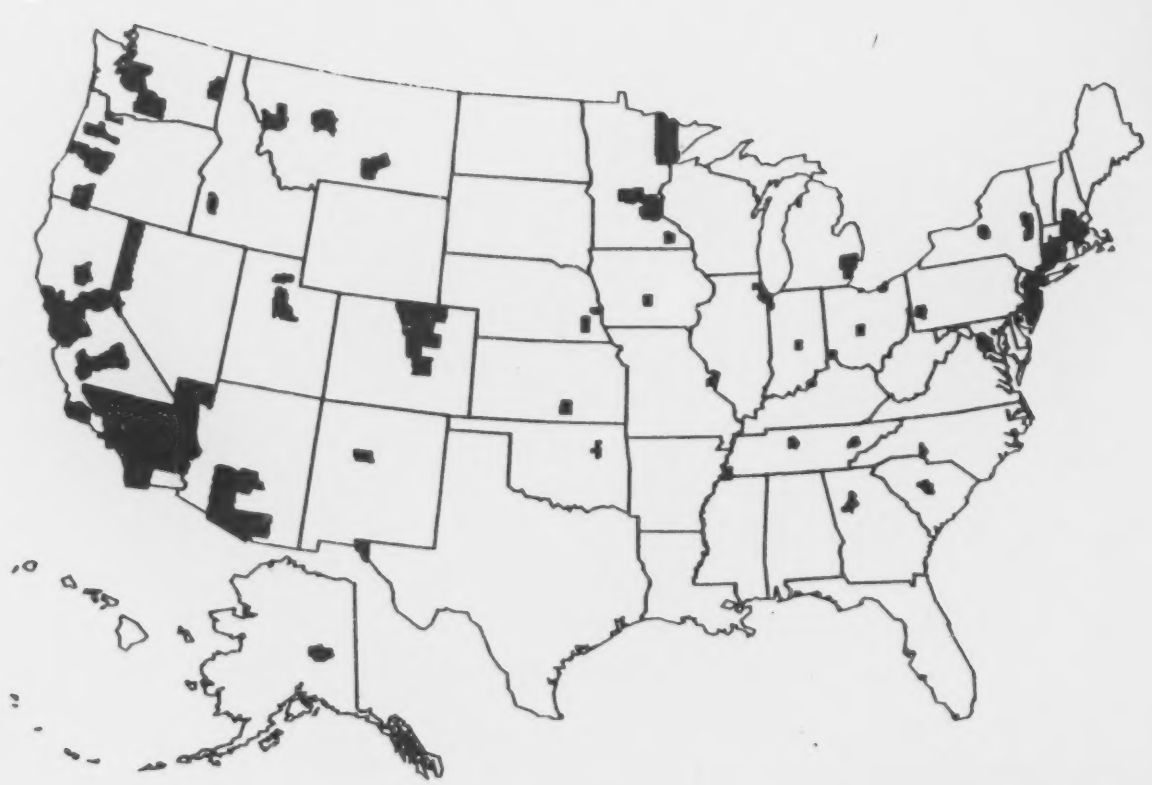
Source: EPA

PROMULGATED LIST OF OZONE NON-ATTAINING COUNTIES - 1985



SEPTEMBER 1985
Source: EPA

PROMULGATED LIST OF CO NON-ATTAINING COUNTIES - 1985



SEPTEMBER 1985

Source: EPA

PROMULGATED LIST OF NO2 NON-ATTAINING COUNTIES - 1985

SEPTEMBER 1985

Source: EPA

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